

REMARKS

Claims 1 and 59 have been amended to recite a structure consisting essentially of a ceramic. Support for this amendment can be found in the specification, for example, on page 5, lines 26-32.

Claims 1-4, 6, 7, 9-38, 50, 52-55 and 57-59 are pending in the application.

Rejections Under 35 U.S.C. §102(b) in view of Fain

Claims 1-4, 6, 7, 9, 17-26, 30, 37, and 57 have been rejected under 35 U.S.C. §102(b) as being anticipated by Fain, et al., U.S. Patent No. 5,340,515 ("Fain").

Applicants respectfully disagree with the Patent Office's statement that "in a non-oxidizing atmosphere oxygen element is not present, hence water, H₂O, would also not be present in the heating atmosphere since it contains an oxygen element. Thus a non-oxidizing atmosphere reads on applicant's claimed moisture-free atmosphere." Those of ordinary skill in the art would understand that the term "oxidizing" does not necessarily refer to the presence of oxygen as an element, but instead refers to changes in electron state (for example, as part of a redox reaction), and those of ordinary skill in the art will be aware of oxidizing agents that do not contain elemental oxygen therein, as well as those that do. Moreover, those of ordinary skill in the art would not believe water to be a good oxidizing agent, and a "non-oxidizing atmosphere" would therefore not necessarily inherently be moisture free. Accordingly, it is not seen how a "non-oxidizing atmosphere" necessarily reads on a "moisture-free atmosphere," as is asserted by the Patent Office. Thus, for at least these reasons, it is respectfully requested that the rejection of independent claims 1 and 57 be withdrawn. The remaining claims, 2-4, 6, 7, 9, 17-26, 30, and 37, each depend, directly or indirectly, from claim 1, are believed to be allowable for at least the above-mentioned reasons. Withdrawal of the rejection of these claims is also respectfully requested.

Rejections Under 35 U.S.C. §102(e) in view of Schueller

Claims 1-4, 6, 7, 9, 11-22, 25, 26, 30-38, 50, 53-55, and 59 have been rejected under 35 U.S.C. §102(e) as being anticipated by Schueller, et al., U.S. Patent No. 6, 143,412 ("Schueller"). The Patent Office states that Schueller teaches high carbon precursors can be used

to fill a mold, and high carbon precursors are the same as ceramic precursors. The Patent Office also states that a deoxygenated argon atmosphere is deemed to be a moisture free atmosphere.

At the outset, Applicants do not concede that Schueller is properly prior art to the Applicants' claimed inventions. Applicants reserve the right to establish invention dates for the claimed inventions that are on or before the effective 35 U.S.C. §102(e) date of Schueller relied on in the Office Action.

With respect to independent claim 1, Applicants do not see where in Schueller is there a disclosure or a suggestion of producing a structure consisting essentially of a ceramic. To the contrary, Schueller teaches high-carbon structural articles (see, e.g., the abstract), and states that ceramics may be included as fillers within the high-carbon structures (Col. 11, lines 45-46). Additionally, it is not seen how an atmosphere deoxygenated using argon necessarily reads on a "moisture-free atmosphere," as is asserted by the Patent Office. If the Patent Office considers a deoxygenated atmosphere to be an atmosphere free of elemental oxygen and thus necessarily reading on an atmosphere free of water, it is believed that this assertion is incorrect, as was discussed above with respect to Fain. Accordingly, it is believed that independent claim 1, as amended, is not anticipated by Schueller, and it is respectfully requested that the rejection of claim 1 be withdrawn. Claims 2-4, 6, 7, 9, 11-22, 25, 26, and 30-38 each depend, directly or indirectly, from independent claim 1, and are believed to be allowable for at least the above-mentioned reasons. Withdrawal of the rejection of these claims is respectfully requested.

Regarding claims 50, 53-55, and 59, the Patent Office has not provided any reasons for the rejections of these claims. It is not seen where in Schueller is there a disclosure or a suggestion of a mold that has been silanized, an act of reacting a mold with an agent selected from the group consisting of an alkylating, silylating, fluoroalkylating, or alkylsilylating agent, an act of treating a substrate surface to render the substrate inert with respect to a reaction with a ceramic precursor and any subsequent products resulting from the ceramic precursor, or an act of producing a structure consisting essentially of a ceramic, as is recited in these claims. Accordingly, clarification or withdraw of the rejection of these claims is respectfully requested.

Rejections Under 35 U.S.C. §103(a) in view of Schueller and Warren

Claims 27-29 and 58 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Schueller in view of Warren, et al., U.S. Patent No. 4,250,127 ("Warren").

Claims 27-29 indirectly depend from claim 1. For at least the reasons explained above with respect to the rejection under §102(a) in view of Schueller alone, the premise of the rejection of claim 1 (that Schueller teaches all of the limitations of claim 1) is believed to be incorrect. Accordingly, while Applicants do not concede that there would have been any suggestion or motivation to combine Schueller and Warren in the manner suggested in the Office Action, the present rejection cannot stand, regardless. Thus, withdrawal of the rejection of claims 27-29 is respectfully requested.

Additionally, regarding claims 28, 29, and 58, it is not seen where in either Schueller or Warren is there a disclosure or suggestion of an act of dissolving a mold in a solution containing fluoride anions, and the Patent Office has not pointed to such a disclosure or suggestion. The Patent Office has also not pointed to a teaching or suggestion in either Schueller or Warren that would lead one of ordinary skill in the art to make the combination, as is required under §103(a). While Schueller is generally directed to the fabrication of carbon microstructures (see, e.g., the abstract), Warren is "directed to the formation of electron microscopy grids" as stated in the Office Action. The Patent Office has provided no motivation for a person of ordinary skill in the art to combine a high-carbon structural article with an electron microscopy grid. Moreover, even if such a combination were made, it is not clear if the combination would be functional, as Schueller and Warren are directed to different applications.

The Patent Office also asserts that "It would be obvious to a person of ordinary skill in the art, at the time the invention was made to have used the appropriate substance that would dissolve the mold and not attack the molded product as taught by Warren. Hence the claimed fluoride substance is clearly envisaged by the general teachings of Warren." The Patent Office also goes on to state that "Routine experimentation may be conducted to arrive at the claimed fluoride substance." Applicants disagree with the assertion that routine experimentation could be used to arrive at a fluoride anion. There could potentially be thousands or millions of compounds that would need to be tested to determine if a given compound could dissolve a given mold, and as the Patent Office notes, "The type of substance used to dissolve the mold would

depend on the type of mold being used.” Accordingly, one of ordinary skill in the art would have no reasonable expectation of success of identifying a fluoride anion based on the teachings of Schueller and Warren, as is asserted by the Patent Office, and thus, the present rejection cannot stand. Thus, for at least these reasons, withdrawal of the rejection of claims 28, 29, and 58 is respectfully requested.

Rejections Under 35 U.S.C. §103(a) in view of Schueller

Claims 10 and 52 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Schueller alone.

As described above with respect to the rejection under §102(a), the premise of the rejection of independent claim 1, from which claim 10 indirectly depends, is believed to be incorrect. Accordingly, while Applicants do not concede that there would have been any suggestion or motivation to make the modifications suggested by the Patent Office, the present rejections cannot stand, regardless. Thus, withdrawal of the rejection of claim 10 is respectfully requested.

With respect to claim 52, it is not seen where in Schueller is there a disclosure or a suggestion of a silanized mold, as is recited in claim 52. Regarding the viscosity having a value of less than about 500 cm²/s, the Patent Office has not pointed to a disclosure or suggestion in Schueller that would motivate one of ordinary skill in the art to try lower viscosities, nor has the Patent Office provided any evidence that one of ordinary skill in the art would be able to identify a ceramic precursor having a viscosity of less than about 500 cm²/s using no more than routine experimentation. Thus, it is believed that this rejection is improper, and it is respectfully requested that the rejection of claim 52 be withdrawn.

Rejections Under 35 U.S.C. §103(a) in view of Fain

Claim 10 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Fain.

As previously described with respect to the rejection under §102(b) in view of Fain, the premise of the rejection of claim 1 (that Fain teaches all of the limitations of claim 1) is believed to be incorrect. Accordingly, all Applicants do not concede that there would have been any suggestion or motivation to make the modification suggested by the Office Action, the present

rejection cannot stand, regardless. Thus, withdrawal of the rejection of claim 10 is respectfully requested.

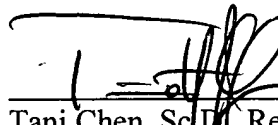
CONCLUSION

In view of the foregoing remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this response, that the application is not in condition for allowance, the Examiner is requested to call the Applicants' representatives at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicants hereby request any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,

By:



Tani Chen, Sc.D., Reg. No. 52,728
Timothy J. Oyer, Ph.D., Reg. No. 36,628
Wolf, Greenfield & Sacks, P.C.
600 Atlantic Avenue
Boston, Massachusetts 02210-2206
Telephone: (617) 646-8000

Docket No.: H0498.70155US00
Date: May 4, 2005
x05/24/05x